

**REMARKS****Status Of The Claims**

Claims 1-3, 22-30, 32-40, 46-74 are pending in the present application. Claims 4-21 and 41-45 have been withdrawn from consideration by the Examiner as being directed to a non-elected invention. Claims 1-3, 22-25, 27, 28, 30, 32, 46, 47, 55, 56 and 64 have been amended. Claims 65-74 have been added. No new matter has been added by this amendment.

Claims 22-30, 32-40 and 47-64 are rejected under 35 U.S.C. §112 as failing to comply with the written description requirement. Claims 1-3, 22-26, 28-30, 32-40, 46-51 and 53-64 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dale et al. (USP 4,317,460) in view of Wahle et al. (USP 4,301,816). Applicants respectfully request favorable consideration in light of the following remarks.

**Rejections Under 35 U.S.C. §112**

Claims 22-30, 32-40 and 47-64 are rejected under 35 U.S.C. §112 as failing to comply with the written description requirement.

The Examiner asserted that the specification does not support the limitation in claims 22-30, 32-40 and 47-64 for a catalyst comprising a “metal compound including one of silver, nickel, dysprosium and combinations thereof”. Applicants respectfully disagree. Applicants assert that the following passage in the specification supports this claim limitation, which includes a metal compound comprising the transition metal silver and rare-earth metal dysprosium:

A preferred catalyst is a transition metal including rare earth metals and a platinum metal group. Preferred transition metals include at least one of copper, cobalt, iron, silver, nickel, their alloys, their mixtures and combinations thereof, with silver being the most preferred. The transition metal may be elemental, an oxide, or combinations thereof. Page 2, lines 3-7.

As the Examiner pointed out, Example 5 in the specification discloses a catalyst comprising nickel oxide particles modified with the rare-earth element dysprosium. This is one embodiment of the catalyst described in the above-quoted passage from the specification, namely, a catalyst comprising a transition metal (nickel) including a rare earth metal (dysprosium). The above-quoted passage from the specification is broader than the single embodiment disclosed in Example 5. Indeed, this passage expressly states that silver is a most preferred transition metal which may be combined with a rare earth metal. Accordingly, this passage taken alone or together with the embodiment disclosed in Example 5 reasonably conveys to one skilled in the art that the inventors were in possession of a catalyst comprising a metal compound of silver and a rare earth metal such as dysprosium.

The Examiner also asserted that the specification does not include support for the limitation in claims 26 and 51 specifying that “silver is between about 4 and 10 percent of the adsorbent material”. Applicants respectfully disagree. Applicants assert that Example 4 and Table 1 (entitled “Concentration of Silver in Zeolite-Supported Catalysts/Adsorbents from AA Analysis Data”) disclose four embodiments of the claimed invention having silver contents between 4.0 and 10.0% of the adsorbent material. Applicants respectfully submit that these embodiments are sufficient to support a limitation for an adsorbent material comprising between about 4 and 10 percent silver.

#### **Rejections Under 35 U.S.C. §103(a)**

Claims 1-3, 22-26, 28-30, 32-40, 46-51 and 53-64 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dale et al. (USP 4,317,460) in view of Wahle et al. (USP 4,301,816). Applicants respectfully submit that this rejection is improper. As set forth in more detail below, Dale et al. does not include any motivation for, and in fact teaches away from, the

use of venting holes to discharge mainstream smoke combustion products. Further, neither Dale et al. nor Wahle et al., alone or in combination, disclose, teach or suggest each element of the claimed invention. Specifically, neither Dale et al. nor Wahle et al. disclose, teach or suggest the use of a venting hole as an alternate path for the discharge of carbon monoxide (or any other mainstream smoke combustion product) to the surrounding atmosphere.

As described in Dale et al., carbon monoxide is formed at the burning firecone of the cigarette tobacco column and is drawn as part of the mainstream smoke through the length of the tobacco column to the mouth end of the cigarette. Col. 1, lns. 4-7. Dale et al. further states that the prior art consists of two different types of systems for removing some of the carbon monoxide from the mainstream smoke inhaled by the smoker.

The first prior art system uses an adsorbent material to physically adsorb some of the carbon monoxide from the mainstream smoke before it can be inhaled by the smoker. However, as stated in Dale et al., this absorbent-based prior art system did not remove sufficient amounts of carbon monoxide from the mainstream smoke. Col. 1, lns. 14-16.

Dale et al. also describes another prior art system having a catalyst or oxidant in the cigarette filter for oxidizing carbon monoxide to carbon dioxide. Col. 1, lns. 16-36. In this catalyst-based prior art system, the byproducts of the catalytic reaction remain in the mainstream smoke and are inhaled by the smoker. Therefore, it is an object of the catalyst-based prior art system to convert as much carbon monoxide to carbon dioxide as possible before the mainstream smoke, including the byproducts of the catalytic reaction, is inhaled by the smoker.

Dale et al. discloses an improved catalyst-based system for low temperature oxidation of carbon monoxide to carbon dioxide. More specifically, Dale et al. is directed to a system having a catalyst with increased activity for converting carbon monoxide to carbon

dioxide. The increased activity of the catalyst converts more carbon monoxide to carbon dioxide and reduces the amount of carbon monoxide remaining in the mainstream smoke inhaled by the smoker. Dale et al. further discloses that the embodiments of the improved catalyst described in Examples 1-6 have catalytic activity of between 80% and 100%. Accordingly, Dale et al. teaches eliminating all or nearly all of the carbon monoxide from the mainstream smoke by converting it to carbon dioxide. Therefore, there is no motivation in Dale et al. to include venting holes to discharge carbon monoxide from the mainstream smoke as suggested by the Examiner. Indeed, Dale et al. teaches away from the need to use venting holes to discharge carbon monoxide from the mainstream smoke since all or virtually all of the carbon monoxide has been converted to carbon dioxide:

The Examiner correctly pointed out that Wahle et al. discloses and describes a smoking product having perforations formed near the filter tip. However, as expressly stated in the passages quoted below, Wahle et al. discloses that these perforations admit atmospheric air through the cigarette wrapper and into the mainstream smoke to dilute the deleterious ingredients, such as nicotine and tar, in the mainstream smoke inhaled by the smoker.

The perforations admit atmospheric air which is admixed to the column of tobacco smoke to reduce the percentage of nicotine and tar. Thus, there also exist an urgent need for filter mouthpieces whose constituents can intercept a high percentage of deleterious ingredients of tobacco smoke, which dilute tobacco smoke by mixing the smoke with atmospheric air, and which can be produced and assembled with tobacco rods at a reasonable costs. Col. 1, Ins. 35-43 (emphasis added).

That portion of the envelope 43B which surrounds the plug 31B is formed with perforations or holes 53 which admit atmospheric air into the interior of the plug 31B whereby such air mixes with the column of tobacco smoke which flows toward the smoker's mouth when the exposed portion of the plain cigarette 41 is lighted. Col. 3, Ins. 33-39 (emphasis added).

However, in each instance, at least one of the components is an "NWA-filter", and that portion of the envelope which surrounds the "NWA-filter" is preferably provided with perforations to admit atmospheric air into its interior by way of the reinforced permeable (porous) peripheral layer. Col. 3, lns. 59-64 (emphasis added).

The filter cigarette Z1' of FIG. 2 differs from the cigarette Z1 in that the "'AW-filter'"31B' of the mouthpiece F1' is located between the plain cigarette 41' and the filter plug 39B' which latter corresponds to the filter plug 39B of FIG. 1. The envelope 43B' has perforations 53' which admit air into the interior of the "NWA-filter" 31B'. Col. 3, ln. 65 – Col. 4, ln. 3 (emphasis added).

Therefore, as repeatedly recited in Wahle et al., the perforations formed in the cigarette wrapper are for admitting atmospheric air through the cigarette wrapper and into the mainstream smoke when the cigarette is drawn on by the smoker for diluting the deleterious ingredients in the mainstream smoke inhaled by the smoker. This is diametrically opposite the function of the venting holes recited in the present claims, which provide an alternate path for discharging carbon monoxide from the smoking article. Wahle et al. does not disclose, describe, teach or suggest the use of perforations formed in the cigarette wrapper for discharge of any combustion products in the mainstream smoke.

Consistent with Wahle, et al., Dale et al. only describes the intake of air through the cigarette wrapper to dilute the carbon monoxide in the mainstream smoke inhaled by the smoker.

Upon smoking a smoking product, such as a cigarette, carbon monoxide is formed at and near the burning tip and a gaseous mixture containing carbon monoxide is drawn through the mouth end of the cigarette. The proportion of carbon monoxide depends, inter alia, on the air supply through the walls of and along the length of the smoking product. By increasing the air supply the proportion of carbon monoxide can be reduced but even with optimum air supply the gas will still contain a significant proportion of carbon monoxide. Col. 1, lns. 4-13 (emphasis added).

Dale et al. does not disclose, teach or suggest discharging any of the combustion products in the mainstream smoke through the cigarette wrapper. Instead, all of the combustion products in the mainstream smoke, including the carbon monoxide and carbon dioxide byproducts of the catalytic reaction, are inhaled by the smoker through the mouth end of the cigarette.

Contrary to the Examiner's assertion, neither Dale et al. or Wahle et al. disclose reducing the amount of deleterious components from the cigarette main stream smoke by discharging it from the smoking article through an alternate path before it can be inhaled by the smoker. Instead, Dale et al. and Wahle et al. disclose and describe that the percent or proportion of deleterious components may be reduced through dilution by virtue of drawing atmospheric air through the cigarette wrapper pores and/or perforation holes and into the main stream smoke. The amount of deleterious components in the main stream smoke inhaled by the smoker is not reduced. Accordingly, the asserted combination of Dale et al. and Wahle et al. does not disclose, teach or describe the invention recited in pending claims 1-3, 22-26, 28-30, 32-40, 46-51 and 53-64.

### **CONCLUSION**

Based on the foregoing amendments and remarks, Applicants respectfully request entry of this Amendment and Response and favorable consideration of the amended claims.

### **AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, , Order No. 4505-4016. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

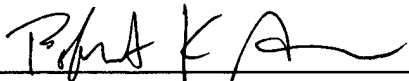
In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a

petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 4505-4016. A DUPLICATE OF THIS DOCUMENT IS ATTACHED.

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

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